

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 13. (Cancelled).

14. (Currently Amended) A plasma processing apparatus for supplying microwaves into a process chamber so as to generate plasma, to thereby treat an object to be processed with the plasma; wherein the process chamber comprises a top plate and a chamber wall for defining the process chamber; and the chamber wall has at least one antenna so that the antenna penetrates the chamber wall into the inside of the process chamber; and the antenna is disposed in the inside of the process chamber with respect to the top plate and the top plate has a plurality of holes for passing a gas to be supplied to the process chamber .

15. (Original) A plasma processing apparatus according to claim 14, wherein the antenna comprises a voltage-drawing rod for drawing a voltage from a waveguide or resonator disposed outside of the process chamber; and an insulating material surrounding the voltage-drawing rod.

16. (Original) A plasma processing apparatus according to claim 14, wherein at least one antenna is disposed in the process chamber, so as to provide a linear and/or curved line.

17. (Currently Amended) A plasma processing apparatus according to claim 15, wherein the position of the voltage drawing of the voltage-drawing rod ~~17~~ in the waveguide corresponds to $\{(1+2m)/2\}\lambda_g \pm (1/4)\lambda_g$ (λ_g : guide wavelength; m ; integer) from the terminal of the waveguide.

18. (Cancelled).

19. (Original) A plasma processing apparatus according to claim 15, which has a tuner for changing the degree of the protrusion of the voltage-drawing rod into the waveguide or resonator.

20. (Original) A plasma processing apparatus according to claim 15, which has a mechanism for moving the voltage-drawing rod per se so that the coupling between the plasma and the waveguide or resonator is variable.

21. (Cancelled).

22. (Original) A plasma processing apparatus according to claim 15, which has a mechanism for variably changing the distance between the top plate and the voltage-drawing rod.

23. (Original) A plasma processing apparatus according to claim 14, wherein a measuring device is disposed in at least one position of the top plate so as to monitor the state of the generated plasma.

24. (Cancelled)

[26]25. (Currently Amended) A plasma processing apparatus according to claim 14, wherein a susceptor for supporting the object to be processed is disposed in the process chamber, and a bias is applicable to the susceptor.

[27]26. (Currently Amended) A plasma processing apparatus according to claim 14, wherein at least a portion of the ground line in the process chamber has an opening, and the plasma is generated due to the radiation of microwave electric field from the opening toward the outside of the ground line.

27. – 40. (Cancelled).

41. (New) A plasma processing apparatus according to claim 15, wherein the thickness or diameter of the voltage-drawing rod disposed in the process chamber is changed along the propagation direction of the microwaves.

42. (New) A plasma processing apparatus according to claim 15, wherein an insulating fluid is circulated between the voltage-drawing rod and the insulating material.